

TACTICAL EMPLOYMENT OF THE NEW DIVISION ARTILLERY

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The requirements of the battlefield of the future were the paramount considerations on which the US Army Artillery and Missile School based its recommendations for the New Division artillery. This does not mean that the tactical fundamentals developed in World War II and the Korean conflict were ignored. On the contrary, it was evident that past lessons would add the required balance to the forecast of the future. Hence, the general fundamentals which govern the employment of field artillery continue to apply. These fundamentals are explained in FM 6-20, December 1958, Field Artillery Tactics and Techniques.

A discussion of all tactics and techniques concerning the New Division artillery would become involved and lengthy. Consequently, this article is limited to general fundamentals, organization for combat including tactical missions, tactical employment, fire planning, fire support coordination, liaison, and coordination of operations with the infantry mortar platoon.

Organization for Combat

The major difference between organizing for combat in the ROCID and the New Division artilleries lies in the relative simplicity and flexibility afforded by the new organization. The inherent responsibilities of the direct support mission require that the howitzer battalion (direct support) is responsive to the needs of the battle group while the division artillery as a whole is responsive to the requirement of the division. The primary purpose of organizing for combat remains twofold: (1) to place each artillery unit in a tactical organization and (2) to assign each unit a tactical mission. The provisions, objectives, and considerations outlined in FM 6-20 also are unchanged since generally they will apply to any organization. Another consideration was the table of tactical missions in FM 6-20. Continuous review by the School and contact with artillerymen in the field has shown a definite requirement for restoring general support, reinforcing as a separate tactical mission. Therefore, forthcoming doctrinal publications will amend the paragraph and chart on tactical missions to reflect this change. Consequently, the table in FM 6-20, December 1958, has been amended to add the information in table 3.

Prior to the latest reorganization, two additional missions were envisioned for the artillery with the division. These two missions were "support" and "general support of the battle group by organic artillery." The support mission will be retained for future study concerning its use with the pentomic infantry division on the nuclear battlefield when the

| | | | | | |
|--------------------------------|---|--------------------------|----------------------------------|--|--|
| An Arty Unit with a mission of | Answers calls for fire from | Establishes liaison with | Has the following zone of fire | Must furnish forward observers | Displaces on order of |
| General support, reinforcing | Next higher hq Reinforced unit. Own observers. | Reinforced unit | Zone of action of supported unit | As requested by reinforced unit subject to approval of higher hq | Next higher Artillery hq or as requested by reinforced unit subject to approval of next higher hq. |

Table 3. Responsibilities inherent to the mission of general support, reinforcing.

infantry brigade or a task force composed of two or more battle groups is employed under a single commander. The mission of general support of the battle group will be applicable only when artillery is attached to the battle group. Two statements now can provide general guidance for the employment of the New Division artillery. First, one howitzer battalion normally will be in support of each committed battle group. Second, the rocket/howitzer battalion (general support) normally will be given a mission of general support.

Tactical Employment

Naturally there are differences in the employment and organization for combat between the New Division and ROCID artilleries. Situations have been developed to graphically show these differences. In the first situation (fig 3) the ROCID artillery supports the attack of the 1st Infantry Division.

The main attack will be made by the 1/2 Inf (1st Battle Group, 2d Infantry) in the form of a penetration to seize objective 2. Secondary attacks will be made by the 1/1 Inf; 1/3 Inf; and the 1/4 Inf. Initially, the division reserve consists of the 1/5 Inf and the 1/37 Armor (1st Medium Tank Battalion, 37th Armor) (minus). Both reserve units under the control of the 1st Infantry Division Brigade. The positions of the ROCID artillery units are shown as follows: (1) Batteries A, B, C, D, and E are 105-mm howitzer units organic to the 1/1 Arty (1st Howitzer Battalion, 1st Artillery), and their positions are indicated by unshaded symbols. (2) The battalion position area of the 1/1 Arty, is indicated by a solid line "goose-egg." (3) Batteries A, B, C, and D, whose positions are shown as shaded symbols, are organic to the 1/2 Arty. The battalion position area of the 1/2 Arty, is shown by a broken line "goose-egg." (4) Those

Organization for Combat
 ROCID Artillery
In the Attack

- a. 1st How Bn, 1st Arty:
 - Btry C
 - Btry D
 - Btry B, 1st FA Bn, 2d Arty;
 - Support 1st BG, 3rd Inf, and
 - 1st BG, 4th Inf; prepare to
 - support div res, on order.
 - BG plan fires of one
 - 105-mm btry each.
- b. Btry A, 1st How Bn, 1st Arty:
 - Reinforce fires of mortar
 - btry, 1st BG, 1st Inf.
- c. 1st FA Bn, 2d Arty:
 - Btry A
 - Btry B, 1st How Bn, 1st Arty
 - Btry E, 1st How Bn, 1st Arty;
 - Support 1st BG, 2d Inf;
 - prepare to reinforce
 - mortar btry, 1st BG, 5th
 - Inf, with one 105-mm btry
 - on order.
- d. Btry C, 1st FA Bn, 2d Arty: GS.
- e. Btry D, 1st FA Bn, 2d Arty: GS.

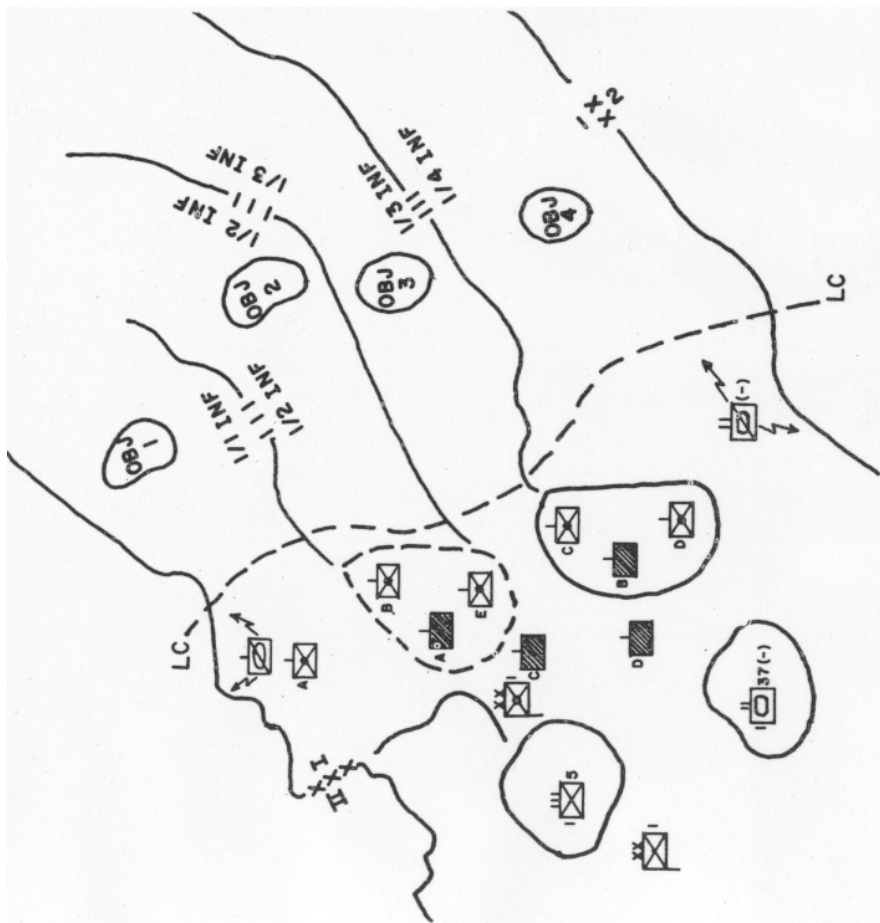


Figure 3. ROCID artillery in support of the attack.

Organization for Combat
New Division Artillery

In the Attack

- a. 1st How Bn, 1st Arty: DS
1st BG, 1st Inf.
- b. 1st How Bn, 2d Arty: DS
1st BG, 2d Inf.
- c. 1st How Bn, 3d Arty: DS
1st BG, 3d Inf.
- d. 1st How Bn, 4th Arty: DS
1st BG, 4th Inf.
- e. 1st How Bn, 5th Arty:
Reinf 1st How Bn, 2d Arty;
Prepare to DS 1st BG, 5th Inf
on order.
- f. 1st Rkt/How Bn, 6th Arty: GS.

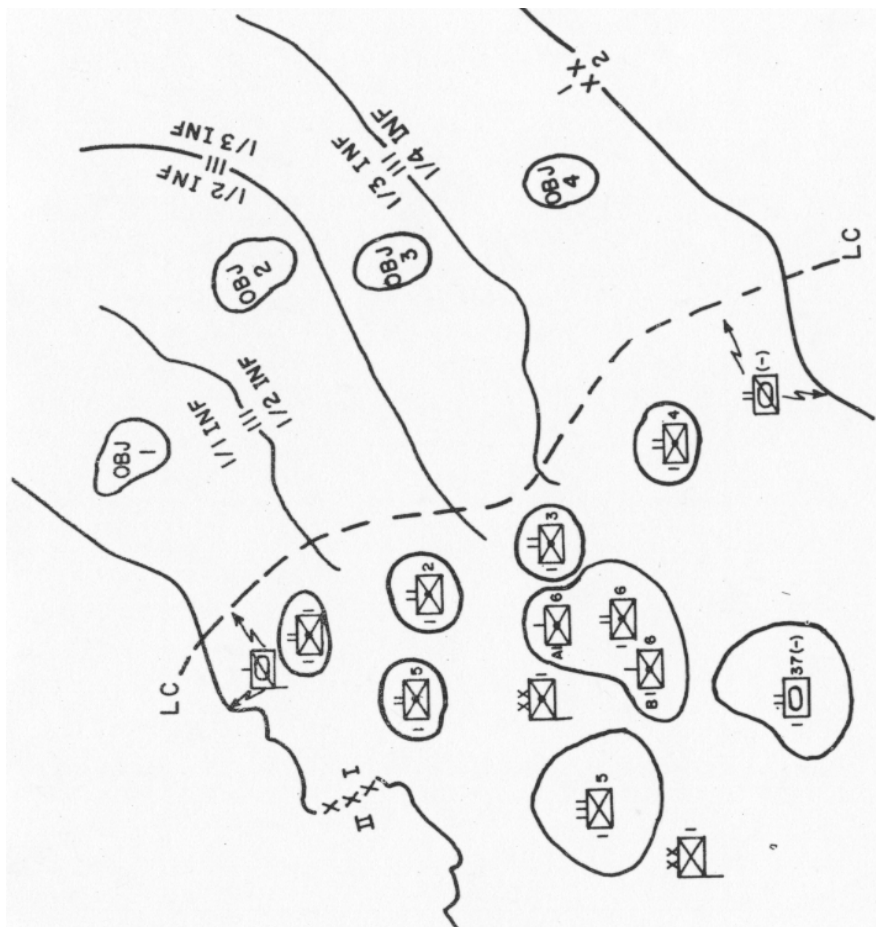


Figure 4. New Division artillery in support of the attack.

batteries shown outside of the battalion areas have been assigned a tactical mission different than the one assigned their parent battalion. In this typical method of employment and the resultant organization for combat, direct support will be provided by the mortar batteries of the battle groups. The division artillery must provide reinforcing fires for the mortar batteries as well as other fire support for the division. The required fire support must be accomplished using only two battalion headquarters. These requirements and limitations result in a normal employment of both battalions as composite units. Therefore batteries are

| Organization for Combat ROCID Artillery <u>In the Attack</u> | Organization for Combat New Division Artillery <u>In the Attack</u> |
|---|--|
| a. 1st How Bn, 1st Arty: Btry C Btry D Btry B, 1st FA Bn, 2d Arty; Support 1st BG, 3d Inf, and 1st BG, 4th Inf; prepare to support div res, on order. BG plan fires of one 105-mm btry each. | a. 1st How Bn, 1st Arty: DS 1st BG, 1st Inf. |
| b. Btry A, 1st How Bn, 1st Arty: Reinforce fires of mortar btry, 1st BG, 1st Inf. | b. 1st How Bn, 2d Arty: DS 1st BG, 2d Inf. |
| c. 1st FA Bn, 2d Arty: Btry A Btry B, 1st How Bn, 1st Arty Btry E, 1st How Bn, 1st Arty; Support 1st BG, 2d Inf; prepare to reinforce mortar btry, 1st BG, 5th Inf, with one 105-mm btry on order. | c. 1st How Bn, 3d Arty: DS 1st BG, 3d Inf. |
| d. Btry C, 1st FA Bn, 2d Arty: GS. | d. 1st How Bn, 4th Arty: DS 1st BG, 4th Inf. |
| e. Btry D, 1st FA Bn, 2d Arty: GS. | e. 1st How Bn, 5th Arty: Reinf 1st How Bn, 2d Arty; Prepare to DS 1st BG, 5th Inf on order. |
| | f. 1st Rkt/How Bn, 6th Arty: GS. |

Table 4. Comparison of the organization for combat of the ROCID and New Division artilleries in the attack.

constantly being transferred between battalions to meet the demands of different situations. The result is reflected in the complicated organization for combat shown in figure 3.

The deployment of the New Division artillery to support the 1st Infantry Division attack described above is illustrated in figure 4.

The position areas of the howitzer battalions (1/1 Arty, 1/2 Arty, 1/3 Arty, 1/4 Arty and 1/5 Arty) are shown by unshaded symbols. The batteries of the rocket/howitzer battalion are indicated within the battalion area. Since the 1/5 Inf is in division reserve, the 1/5 Arty is being

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This issue of ARTILLERY TRENDS is devoted exclusively to the New Infantry Division artillery. It is intended to answer questions concerning the new organization and serves as a general guide until approved tables of organization and equipment and revised training literature are published. Also, it is hoped that this advanced data will assist units in preparing plans for conversion to the new organization.

The organizational structure and outlined procedures of the New Infantry Division artillery are being finalized for approval by the US Continental Army Command and the Department of the Army. Personnel and equipment numbers quoted in this issue were taken from draft copies of the tables of organization and equipment and are subject to change.

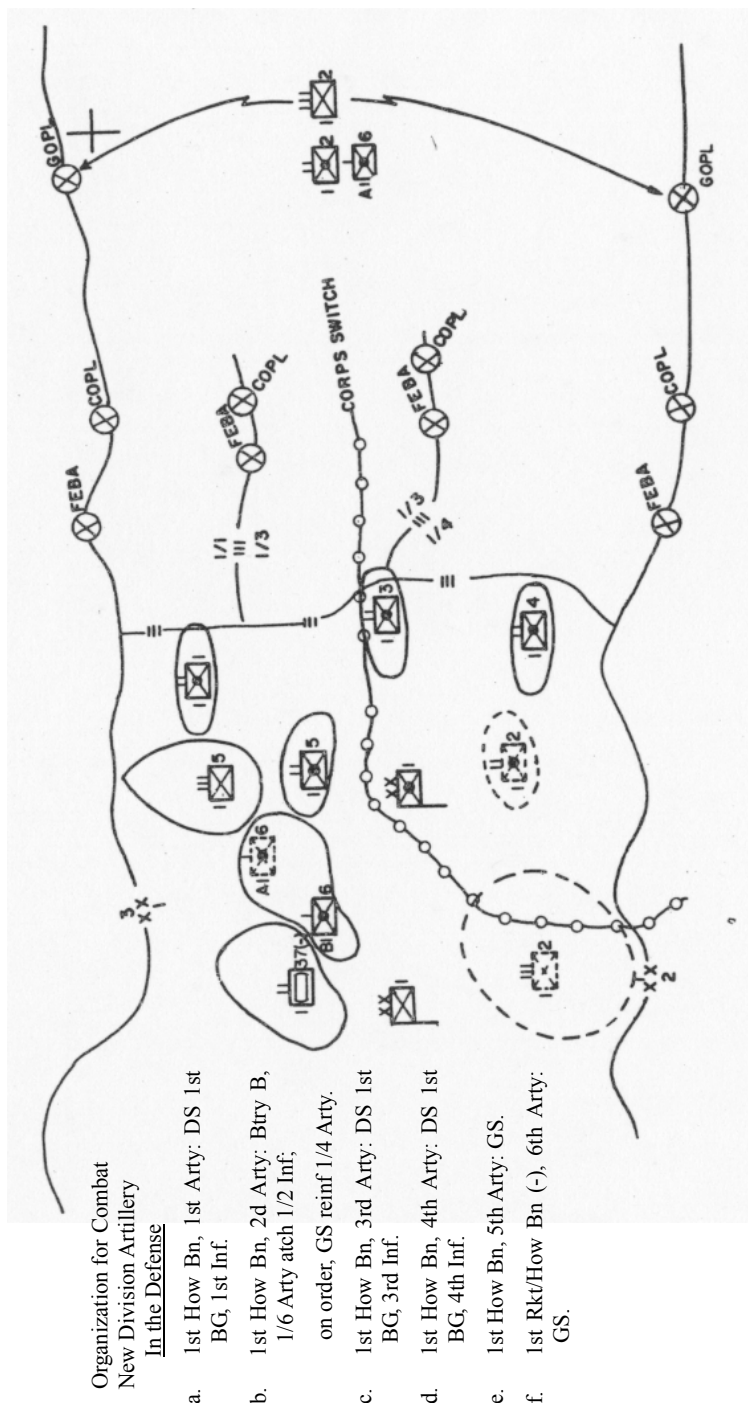


Figure 5. New Division artillery in the defense.

used to give weight to the main effort by the assignment of the mission of reinforcing the 1/2 Arty. This example illustrates that normally, howitzer battalions will not be held in reserve even though their "team mate" battle groups are in reserve. However, in such cases the howitzer battalion should be ready to renew the direct support mission when the battle group which it normally supports is committed.

For comparison, the organization for combat of the ROCID and New Division artilleries is shown in table 4. The advantages of the additional control headquarters in the New Division artillery also are illustrated.

Employment in Defense

The employment of the New Division artillery in defense is shown in figure 5. In this situation the 1st Infantry division has established an extended position defense on a 21-kilometer frontage. The position is a part of a corps mobile defense. Switch positions have been designated by corps within the division sector. The 1/2 Inf (reinforced) occupies the general outpost line (GOPL). Attached to it are the 1/2 Arty and Battery A, 1/6 Arty (8-inch howitzer). Thus, all types of division cannon artillery are represented on the GOPL. The 1st Infantry Division defends with three battle groups forward (1/1 Inf, 1/3 Inf, and 1/4 Inf). In direct support of them are the 1/1 Arty, the 1/3 Arty, and the 1/4 Arty, respectively. The division reserve, initially, is composed of the 1/5 Inf and the 1/37 Armor (1st Medium Tank Battalion, 37th Armor) (minus). Upon withdrawal of the GOPL and subsequent passage through the forward edge of the battle area (FEBA), the GOPL force will occupy the positions shown by broken symbols. At that time Battery A, 1/6 Arty will revert to control by its parent battalion and the 1/2 Arty will be assigned the mission of general support, reinforcing the 1/4 Arty.

The above discussion and figures 3 through 5 bring out the basic considerations in the employment of the New Division artillery. Another consideration is the employment of batteries when detached from their parent battalions. It should no longer be necessary to transfer batteries between battalions to meet changes in the tactical situation. However, there will be cases when the temporary attachment of a battery may be required. Such cases could include support of task forces in exploitation or pursuit, support of security forces such as those which occupy a GOPL, and the temporary replacement of noneffective units. When a firing battery of a howitzer battalion is attached to another headquarters, it will be necessary to augment the battery with survey equipment and personnel, long-range radio equipment, forward observers, and ammunition resupply means.

The employment of the two firing batteries of the rocket/howitzer battalion must be considered. It is best to retain the two batteries under the control of the parent battalion. However, the mission, the situation, or the terrain, particularly on the nuclear battlefield, may require that a battery be attached to another artillery headquarters. The battery may be

attached to the nearest howitzer battalion or placed directly under division artillery control.

When it is desirable to detach one or two 8-inch howitzer sections to execute a mission, the augmentation required must be furnished by the battalion except for fire direction personnel and equipment. The battery cannot provide the required survey and communications means. In regard to the method of employment, detached howitzer sections may execute missions assigned to the battalion or the battery. Eight-inch howitzers and Honest John platoons, may be attached to another artillery headquarters. The organization and equipment of the Honest John battery make the battery capable of operating by platoon for limited periods. The battery can provide each platoon with the necessary personnel and equipment for fire direction, communication, and assembly functions. However, survey support must be furnished by the battalion. The platoon, when operating separately may execute a mission under the one assigned to the battalion or battery. When circumstances dictate, the platoon may be attached to another artillery headquarters.

Fire Planning

The following discussion is devoted to fire planning procedures and channels in the New Division artillery. To make a comparison in this field between the ROCID and New Division artilleries would serve no purpose and would confuse and obscure the essentials.

In effect, fire planning in the New Division artillery follows the well established procedures used in the Triangular Division artillery. There are three outstanding exceptions: (1) The howitzer battalion is in direct support of a group of 5 rifle companies instead of a regiment of 3 battalions. (2) The artillery battalion now requires only one liaison officer whose station is at the battle group command post. (3) The terminology used in fire planning in FM 6-101, January 1952, is no longer appropriate. Specifically, terms now obsolete are "general plan of support," "close support plan," and "direct support plan." These terms have been superseded by the "fire support plan" and the "artillery fire plan." The fire support plan is the announcement of the commander's decisions regarding the employment of fire support. It is the coordinated plan for employment of all fire support available to the commander. The plan is published as an annex to the operation order. The artillery fire plan is designated for each level (battle group, division, corps, and army) and is published as an appendix to the fire support plan.

The basic principles of fire planning have not changed nor have the techniques involved in constructing the artillery fire plan. The changes are the channels through which fire planning is accomplished. Fire planning channels within the infantry division are traced in figure 6.

The lowest echelon concerned with artillery fire planning is the forward observer with the rifle company. In conference with the company commander, the forward observer prepares a basic fire plan. Often, this

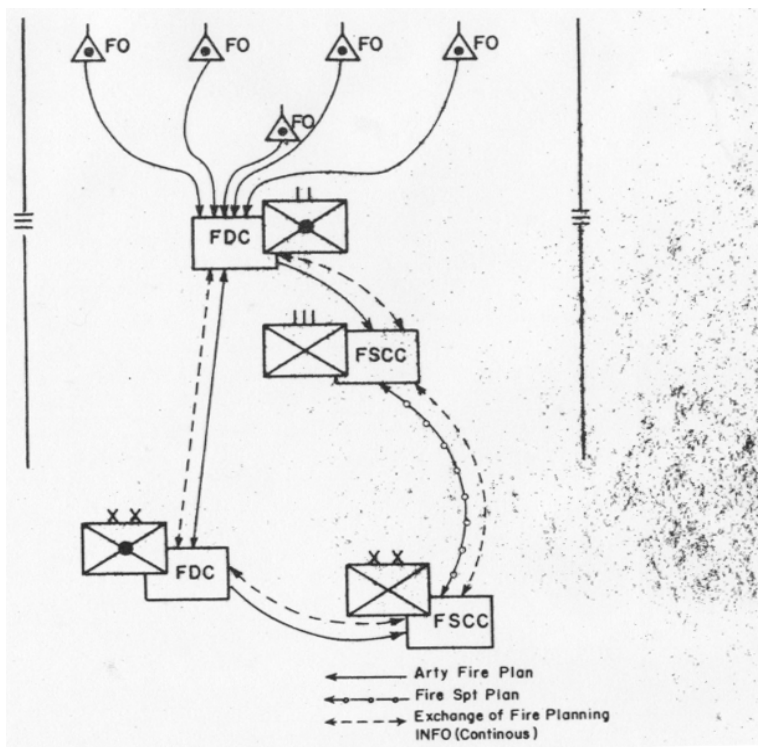


Figure 6. New Division artillery fire planning channels.

may be nothing more than a target list (ARTILLERY TRENDS, October 1958, p. 46). The plan is forwarded to the fire direction center (FDC) of the howitzer battalion. This procedure is followed for several reasons. First, the FDC is the focal point for target intelligence at this level. Second, forward observers are continually in communication with the FDC, sending fire missions, reporting combat intelligence, and supplying post attack information. Third, the direct channel from the forward observer to the FDC provides the simplest and most effective channel available.

S3 Supervises Preparation of Fire Plan

The artillery battalion S3 is the staff officer charged with supervising the preparation of the artillery fire plan. He insures that all fire requests are coordinated and that additional fires are planned as necessary. In so doing he implements the guidance received from his battalion commander who, in turn, has based his guidance upon that provided in the fire support portion of the battle group commander's concept of operation. When finalized (it must include complete integration with other fire support

means available to the battle group commander) and approved by the artillery battalion commander, the artillery fire plan is forwarded to the battle group commander. When approved, the artillery fire plan is forwarded to the division artillery FDC with the artillery battalion's requests for additional fires. Another copy is sent to the battle group where it becomes an appendix to the fire support plan. Whether or not operations orders, annexes, and appendices become written documents at the howitzer battalion level depends upon the time available, the tactical situation, and the policies of commanders.

At division artillery the process is repeated based upon guidance received from the division artillery commander. Fire requests from the howitzer battalions are consolidated, and fire planning is accomplished for attached or reinforcing battalions. After its approval by the division artillery commander, the division artillery fire plan is disseminated as follows: (1) A copy is sent to corps artillery with requests for additional fires. (2) Copies are sent to the division fire support coordination center (FSCC) for addition to the division fire support plan. (3) Copies are sent to artillery battalions with the division as appropriate. (4) Copies are sent to adjacent division artilleries.

The basis for fire planning in the rocket/howitzer battalion is the guidance provided by the division artillery. The rocket/howitzer battalion commander's mission generally will include the assignment of an area which his weapons are able to cover or targets which they are able to reach. This battalion will execute fire plans as developed and directed by division artillery when assigned either a mission of general support or general support, reinforcing.

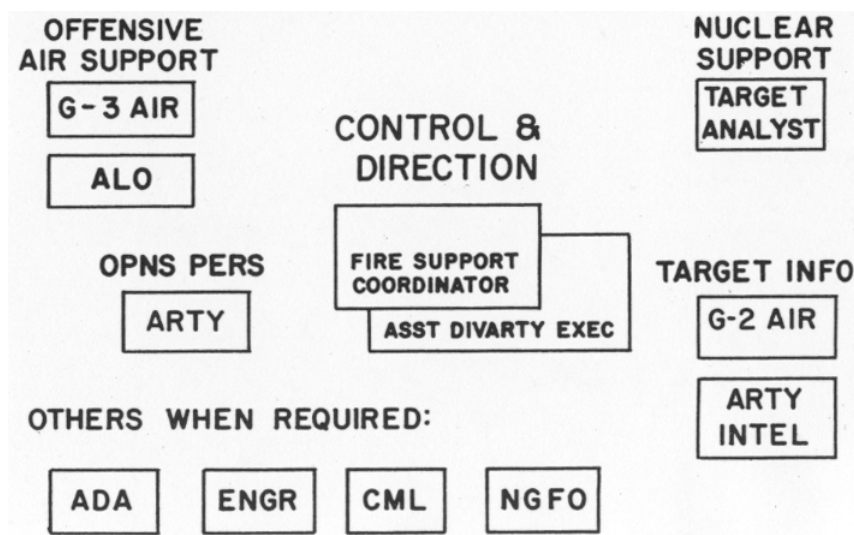


Figure 7. Typical division FSCC.

Fire Support Coordination

The principles and procedures which govern the coordination of fire support are covered in current doctrine and forthcoming publications. Hence, the following discussion is directed only toward points which are peculiar to the New Division artillery. The essential features at both division artillery and battle group levels will be considered.

The size, composition, and location of the division FSCC are determined by the commander. The size of the FSCC may vary during different phases of an operation. Usually, more people are required during the planning phase than the execution phase. A typical division FSCC is shown in figure 7.

Figure 7 is not intended to show an actual physical layout, but rather, the composition of a typical division FSCC. All artillery personnel are not shown since the diagram indicates only the basic requirements for functioning at any one time. Table 5 shows the FSCC personnel provided by the table of organization and equipment (TOE) of the New Division artillery headquarters and headquarters battery. With the exception of the two officers, all personnel are listed in the fire support coordination section of the headquarters battery TOE.

| <u>Duty Position</u> | <u>MOS</u> | <u>Grade</u> | <u>Number</u> |
|-------------------------------|------------|--------------|---------------|
| assistant executive officer | 51193 | Lt Col | 1 |
| assistant S3 | 52162 | Major | 1 |
| operations sergeant | 15270 | E7 | 1 |
| intelligence sergeant | 15270 | E7 | 1 |
| chief fire direction computer | 15260 | E6 | 2 |
| clerk typist | 71110 | E4 | 1 |
| radio telephone operator | 14000 | E3 | 1 |
| radio-teletype operator | 05310 | E4 | 2 |

Table 5. Personnel provided by TOE for continuous duty at division FSCC.

The division FSCC normally will be located close to the G2-G3 section within the division command post. In selecting the command post, consideration is given to the requirement of continuous communication between the FSCC and fire support agencies, in particular, the division artillery FDC. In addition, operational procedures must plan for continuous operation of the FSCC during displacements.

Commander--the Coordinator

The division artillery commander is the division fire support coordinator. His principle assistant, and representative in the FSCC, is the division artillery assistant executive officer. This lieutenant colonel operates in the FSCC on a full time basis. He represents the fire support coordinator in his absence and supervises the implementation of the

commander's concept of fire support. The commander's guidance and general plan for the employment of fire support, including that for nuclear weapons, is included in his concept of operation. This may be announced orally or, if written, shown in paragraph 3a of the division operation order. The fire support portion of this concept forms the foundation for the fire support plan. The latter, when written, becomes an annex to the operation order. The fire plans of the various fire support agencies are appended to the fire support plan. The appendixes which may be required include: (1) the artillery fire plan; (2) naval gunfire plan; (3) air fire plan; (4) nuclear fire plan; (5) chemical, biological and radiological (CBR) fire plan. The fire support coordinator is responsible for the preparation of the fire support plan and for insuring that the various fire plans are coordinated during their planning and execution.

No Formal FSCC at Battle Group

Neither doctrine nor practice prescribe a formal FSCC at battle group level. However, the basic functions are performed by the battle group commander, the fire support coordinator, key personnel of the battle group staff, and certain other personnel. As at division, the size, composition, and location of the FSCC are determined by the guidance and policies of the commander. In accordance with the established principle, the commander of the howitzer battalion is the fire support coordinator since he is the senior artillery officer at the battle group echelon. Because the artillery commander cannot physically be present in the FSCC at all times, he is represented by the artillery liaison officer. The liaison officer is assisted by his own section and other personnel designated by his battalion commander. The artillery representation at battle group may vary with the operational workload.

The fire support coordinator works with the following personnel who are organic to, or may be with, the battle group staff: S3, S2, S3 Air, forward air controller (an Air Force officer), naval gunfire liaison officer (a Naval officer), and other operations and intelligence personnel as required. The battle group S3 is the infantry staff officer primarily concerned with the coordination of fire support and maneuver. In the absence of the battle group commander, he may be responsible for informing FSCC personnel of the tactical situation, the battle group plan of action, and any contemplated changes in operations.

The fire support coordinator bases the fire support plan on the fire support portion of the battle group commander's concept of operation and requests for fires from the companies. In so doing, he resolves conflicting requests from the companies. He uses all fire support means organic to, or directly available to, the battle group before he requests additional fire support. Requests for air strikes and for naval gunfire are coordinated with the forward air controller or naval gunfire liaison officer, and then integrated into the fire support plan as required. When the approved artillery fire plan is received from the howitzer battalion, it is appended to the fire support plan.

Liaison

Most of the changes characteristic of the New Division artillery have been mutually advantageous to the infantry and artillery. One of the most important changes is the reestablishment of effective command liaison at battle group level. The new organization authorizes a lieutenant colonel to command the howitzer battalion. Because of the direct support relationship, he also is the fire support coordinator for the battle group. Thus, an experienced artillery officer with an appropriate staff exercises the command contact which has proved so essential to an efficient infantry-artillery team.

Since the artillery battalion commander cannot remain indefinitely with the battle group commander, the howitzer battalion has a liaison officer (captain) and section (liaison sergeant, liaison specialist, and driver-radio operator). They are stationed at the battle group command post. As previously stated, the liaison officer acts as the battle group fire support coordinator in the absence of his battalion commander.

A liaison officer has been provided in the headquarters of the rocket/howitzer battalion. When this battalion is assigned a mission of general support, liaison will be established as directed by division artillery. The liaison officer may be stationed at the division artillery command post. If not, he will act as directed by his battalion commander. Since liaison may be a function of the tactical mission, the rocket/howitzer battalion liaison officer's station will be established accordingly. For example, if the battalion has been assigned the mission of general support, reinforcing a certain battalion, the liaison officer will be sent to the command post of the reinforced battalion.

Liaison Officer in Division Artillery Headquarters

The TOE of the division artillery headquarters and headquarters battery contains a provision for one liaison officer and section. This officer's station will be as directed by the division artillery commander. It may vary from operation to operation. However, it is anticipated that normally he will be sent to the command post of an adjacent division artillery in accordance with corps directives or standing operating procedure (SOP). For example, a corps SOP may prescribe that division artilleries maintain liaison from left to right. Hence, the division artilleries of committed divisions send a liaison officer to the command post of the division artillery on its right flank.

Liaison between division artillery and corps artillery is established by corps artillery. This is in keeping with established artillery liaison principles since corps artillery does not command the artillery of the divisions with the corps. TOE 6-501D, Headquarters and Headquarters Battery, Corps Artillery, contains provisions for five liaison officers and sections. The majority of these are used for liaison with division artilleries.

Employment of the Infantry Mortar Platoon

Informal coordination with the US Army Infantry School has provided the following general guidance for coordination of artillery support with that of the infantry mortar platoon.

Since the mortar platoon is now an infantry element organic to the battle group, its employment is based on the orders and policies of the battle group commander. However, in order to realize the full effectiveness of the mortars in the overall support of the battle group, the following principles for coordination of mortar fires with those of the howitzer battalion should be considered:

(1) The mortar platoon normally will be employed in general support (mission assigned by the battle group commander) of the battle group with its fires and fire direction operations closely tied to those of the artillery battalion in direct support of the battle group.

(2) The artillery battalion commander, as fire support coordinator, will plan the fires of the mortar platoon and integrate them into the fire support plan.

(3) Both artillery and mortar forward observers will send fire requests directly to the howitzer battalion FDC.

(4) The officer in charge of the artillery howitzer battalion FDC will determine which unit(s) will fire the mission. If the mission is more appropriate to the mortars, the artillery FDC will direct the mortar platoon FDC to fire it.

The above guidance is not intended to interfere with the employment of the mortar platoon by the battle group commander. The battle group commander may attach the mortar platoon to a task force or utilize it or its elements separately if the situation warrants.

Items Currently Under Study

As this issue of ARTILLERY TRENDS goes to press there are several items still undergoing study at the School. If these studies result in changes within the New Division artillery, they will be covered in later issues.

The areas under consideration are concerned with the coordination of fire support at division, brigade, and battle group levels.

First, it has been suggested that the title of division artillery assistant executive officer be changed to assistant division fire support coordinator. The purpose of this change is to delineate more clearly the primary function of this officer because of the importance of this job to the division as a whole.

Second, a proposal is under study which adds an artillery officer and small section to the staff of the brigade headquarters. This officer and section could be provided by the TOE of the division artillery headquarters battery. This officer assisted by his section would function as fire support coordinator when the brigade operates in command of task

forces or engages in similar operations when it is impracticable for the division to coordinate fire support for the brigade. His title would be brigade fire support coordinator.

Third, it has been proposed that in the howitzer battalion, the title of liaison officer be changed to assistant fire support coordinator. This change is similar to that proposed at division level since in actuality, fire support coordination is the primary function of the liaison officer. His duties require his constant presence at battle group. Therefore, the suggested title becomes more appropriate.

The basic and proven principles pertaining to the employment of artillery have not been changed. However, the application of these principles were adjusted to make them compatible with the new organization and the battlefield of the future. The resourcefulness, initiative, and leadership of the commander will continue to decisively influence the outcome of the battle.

A GEM FOR THE BATTERY EXECUTIVE

Artillery weapon laying time can be reduced if the reconnaissance party places a gun stake at each weapon position and reads a deflection to each stake. The recorded deflection on the stake may be used by the gunner as his first deflection reading. The weapons should be brought into position as close to the stake as possible to reduce the offset angle between the sight and gun stake. With practice, the gun crew will be able to lay their weapons much faster. Many times the weapon will be unlimbered within 20 mils of the direction of fire.

--Submitted by 1st Lt Robert A. Ray
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Fort Sill, Oklahoma

Do You Have A Better Solution?

Do you know a better way or have a new method of accomplishing an artillery task than the device or technique now being used? Share your knowledge with other artillerymen. Send that idea to:

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